REMARKS

Applicants hereby amend the application and submit the following remarks. In this response, Applicants amend Claims 1, 11, 19, and 23, and Applicants cancel Claims 6, 14, 16, and 25. Applicants submit this Amendment with an RCE.

In the Office Action mailed December 18, 2001 in this case, the Examiner rejected Claims 1-6, 8-16, 18-25, 27-28, and 30 under 35 U.S.C. § 103(a) as being obvious over Ohashi in view of Van Brocklin. In order to render a claim obvious, the relied upon references must teach or suggest every limitation of the claims such that the invention as a whole would have been obvious at the time the invention was made to one skilled in the art. Among other limitations, independent claim 1 recites sensing the temperature of the electronic component and causing the fluid to move when a threshold temperature is detected. Independent claim 11 recites, among other limitations, wherein a temperature sensor is coupled to the electronic component and to a pump. Independent claim 23 recites, among other limitations, a temperature sensor is coupled to the pump and the heat generating element. Similarly, independent claim 28 recites, among other limitations, a fluid for flowing through the tube when a temperature sensor attains a threshold temperature. Applicants submit that these limitations are not suggested by the cited references in combination.

The Examiner made the rejection in the final Office Action of December 18, 2001, stating that it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the cooling unit of Ohashi with a temperature sensor, that would sense the temperature of the electronic device, and initiates fluid movement when the threshold temperature is detected. (Office Action dated December 18, 2001, numbered paragraph 4.)

In response, Applicants note that the Examiner relied on elements from both Ohashi and Van Brocklin to make the rejection under 35 U.S.C. § 103(a) by relying on In re McLaughlin, a case over thirty years old from a now defunct court. Applicants respectfully submit that the obviousness rejection is improper unless there is a suggestion or motivation to combine the elements of the references to render Applicants' claims obvious. Specifically, In re Sang Su Lee (U.S. Court of Appeals for the Federal Circuit, 277 F.3rd 1338, January 18, 2002) states that, "the factual inquiry whether

to combine references must be thorough and searching. It must be based on objective evidence of record. This precedent has been reinforced in myriad decisions and cannot be dispensed with . . . a showing of a suggestion, teaching, or motivation to combine the prior art references is an essential component of an obviousness holding." (Id. at 1343, emphasis added.) The Sang Su Lee case goes on to hold that, . . . "the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references." (Id. at 1343, emphasis added.)

Applicants respectfully submit that the In re Sang Su Lee reference decided this year from the Court of Appeals for the Federal Circuit is stronger authority than the In re McLaughlin reference cited by the Examiner which allowed "hindsight reasoning".

Applicants respectfully submit that Ohashi does not teach or suggest the desirability of "sensing the temperature of the electronic component and causing the fluid to move when a threshold temperature is detected," as required by independent claim 1, nor does it teach or suggest the desirability of similar limitations found in independent claims 11, 23, or 28. Ohashi does not suggest modifying the design by incorporating such a limitation. Van Brocklin discloses a heat pipe with a phase shift material and a wick to transfer the liquid after it has been condensed. Van Brocklin also discloses a separate heat sink that uses a fan to draw air over the heat sink that is controlled by a thermostat device. Van Brocklin does not teach or suggest the desirability of a liquid flowing between a first heat transfer plate and a second heat transfer plate being controlled by a temperature sensor coupled to the electronic component and the pump as required by independent claim 11, and similar limitations found in claims 1, 23, and 28. Specifically, Van Brocklin does not suggest modifying the device in Ohashi to develop Applicants' claimed invention.

Clearly, the Examiner has not met the requirements of In re Sang Su Lee, of finding a suggestion, teaching, or motivation to combine the prior art references.

Accordingly, Applicants request withdrawal of the rejection of independent claims 1, 11, 23, and 28. Each of the claims dependent on Claims 1, 11, 23, and 28 are not obvious for at least the same reasons as their respective independent claims.

In the Office Action mailed December 18, 2001 in this case, the Examiner rejected Claims 7, 17, 26, and 29 under 35 U.S.C. § 103(a) as being obvious over Ohashi in view of Van Brocklin, further in view of Mizuno.

As stated above, in order to render a claim obvious, the relied upon references must teach or suggest every limitation of the claims such that the invention as a whole would have been obvious at the time the invention was made to one skilled in the art. Among other limitations, Applicants' claims 7, 17, 26, and 29 recite sensing the level of fluid in a fluid container or a fluid sensor for detecting when fluid is low in a fluid container.

In making the rejection, the Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the cooling system of Ohashi with a fluid contained coupled to a tube having a sensor for sensing when the fluid is low in a fluid container. (Office Action dated December 18, 2001, numbered paragraph 7.) In response, Applicants note that there is no teaching or suggestion in either Ohashi, Van Brocklin, or Mizuno to incorporate a fluid sensor for detecting when fluid is low in a fluid container to modify the device of Ohashi. Therefore, the Examiner has not met the requirements of In re Sang Su Lee.

Applicants also note that Mizuno is directed to a device for cooling "external electronic equipment" (Mizuno, col. 3, line 33), and illustrated in Figure 2 showing a cooling device 11 separated from the electronic equipment 40 and connected only by fluid pipes 18 and electrical connections 30 and 33. There is no suggestion to modify this cooling device to incorporate it into electronic equipment as taught by Ohashi.

Thus, the cited references in combination fail to teach or suggest a fluid sensor for detecting when fluid is low in a fluid container as recited by Applicants' claims 7, 17, 26, and 29. Accordingly, the rejection of claims 7, 17, 26, and 29 should be overturned.

In the Advisory Action mailed March 27, 2002 in this case, the Examiner stated that the proposed amendments would not be entered because they raise new issues that would require further consideration and/or search. The Examiner went on to note that the new limitations raise new issues which have not been previously considered by the Examiner.

Applicants respectfully request that the Examiner enter the Preliminary Amendment in the case, then search the new issues that are raised by the Preliminary Amendment in conjunction with the RCE filed herewith.

CONCLUSION

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to deposit account no. 02-2666 for any additional fees required.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR, & ZAFMAN LLP

Dated: 4/18/02

By: William T Babbitt
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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail No. EM013924905US in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on April 18, 2002.

Jean Svoboda
Name *Date* 4/18/02

Attachment: VERSION WITH MARKINGS TO SHOW CHANGES MADE

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

Claims 6, 14, 16, and 25 are canceled.

The claims are amended as follows:

1. (Amended) A method comprising:

coupling a first heat transfer plate to an electronic component in a first part of a portable computing device and a second heat transfer plate in a second part of the computing device;

sensing a temperature of the electronic component;

causing a fluid to move when a threshold temperature is detected; and

circulating ~~a~~ the fluid between ~~one of~~ the first heat transfer plate and ~~a~~ the second heat transfer plate.

11. (Amended) A heat exchanging system comprising:

a first heat transfer plate coupled to an electronic component located in a first part of a portable computing device and to a second heat transfer plate located in a second part of the portable computing device;

a tube coupling the first heat transfer plate to the second heat transfer plate;

a pump coupled to the tube;

a temperature sensor coupled to the tube and to the pump; and

a fluid for circulating through the first heat transfer plate and the second heat transfer plate.

19. (Amended) The heat exchanging system of claim 11, wherein heat is removed from the heat exchanging system at a rate of about 10 to ~~100~~ 50 watts.

23. (Amended) An apparatus comprising:

a heat generating element disposed in a first part of a portable computing device;

a first heat transfer plate coupled to the heat generating element;

a second heat transfer plate disposed in a second part of the portable computing device;

a tube coupled to the first part and the second part of the portable computing device;

a pump coupled to the tube;

a temperature sensor coupled to the pump and the heat generating element; and

a fluid for circulating through the tube, the first part and the second part of the portable computing device, wherein the temperature sensor causes the fluid to flow in the tube when the temperature reaches a threshold temperature.